KMI Colloquium

"Hadronic Interactions and Ultra-High Energy Cosmic Rays"



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Abstract:

On the one hand, the uncertainty in the prediction of shower observables for different primary particles and energies is currently dominated by differences between hadronic interaction models. Since the end of 2009, LHC data has become available for proton-proton scattering at different energies, extending to the reach of collider data. The LHC data on minimum bias measurements can be used to test Monte Carlo generators and these new constrains will help to reduce the uncertainties in air shower predictions. On the other hand some details of the latest measurement of extensive air showers cannot be reproduced by current hadronic models leading to some new questions on the Physics of high energy interactions. In this presentation, we will show the results of the comparison between the currently used high energy hadronic interaction models with LHC data. Results for air shower simulations and from air shower measurements will be discussed.

